

REMARKS

Claims 1-22 are pending in the application and have been examined. Claims 1-22 stand rejected. Claims 1 and 22 have been amended. Reconsideration and allowance of Claims 1-22 in view of the following remarks is respectfully requested.

The Rejection of Claims 1-18 and 20-22 Under 35 U.S.C. § 102(b) as Being Anticipated by U.S. Patent No. 5,294,549 (Pullman et al.)

Claims 1-18 and 20-22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,294,549 (Pullman et al.). Claim 1, from which Claims 2-18 and 20-22 depend, has been amended to clarify that the method comprises the step of cultivating pre-cotyledonary conifer embryogenic cells in, or on, a synchronization medium, wherein the pre-cotyledonary conifer embryogenic cells are cultivated in the synchronization medium prior to cultivation in a development medium. Support for this amendment is found throughout the specification, for example at page 2, line 26-27; page 6, line 25-28; page 7, line 10-18; page 9, line 21-page 10, line 11; and page 16, line 26-31.

It is submitted that the Pullman et al. reference fails to disclose all the elements of the claimed invention. The Pullman et al. reference is generally directed to the use of gibberellin in embryo development medium and it fails to disclose or remotely suggest the step of cultivation in a synchronization media. In contrast to the claimed invention, none of the pre-development stage media described in Pullman et al. contain an absorbent composition and at least one synchronization agent selected from the group consisting of abscisic and gibberellin, as required by Claim 1. See *e.g.*, TABLE 2, Pullman et al. In fact, Pullman et al. teaches away from the claimed invention by teaching the culture of proembryos in a maintenance medium in which "no hormone absorbent is usually necessary or desirable at this time." Pullman, col. 7, lines 43-46.

In contrast, the claimed invention is directed to methods of culturing pre-cotyledonary conifer embryogenic cells to generate synchronized pre-cotyledonary embryos prior to cultivation in a development medium. As described in the instant specification:

"[C]leavage polyembryony (embryonal suspensor mass proliferation) continues in cultures after plating onto development medium, and new embryos are beginning to develop

even after eight to ten weeks of culture on development medium. Due to this continuing cleavage, embryos are not uniform in stage, shape, size, or quality within a single plate. This lack of uniformity detrimentally affects the efficiency to somatic cloning of conifers. The present invention addresses the problem of unsynchronized development of conifer embryogenic cells, including ESMs, by culturing the embryonic cells in, or on, a synchronization medium that causes the majority of embryos in a population of conifer somatic embryos to progress through successive developmental stages together to yield a synchronized population of mature conifer somatic embryos that can be germinated to form conifer plants." Specification at page 4, lines 18-28. As further described in the instant specification with reference to the synchronization medium: "[T]he absorbent composition(s) bind growth-promoting hormones present in the medium so that the rate of multiplication of the embryogenic cells is reduced, or multiplication is stopped entirely, and the gibberellin(s) and abscisic acid promote production of a synchronized population of conifer somatic embryos." Specification at page 9, line 32 to page 10, line 4.

Therefore, the Pullman et al. reference does not teach or remotely suggest the cultivation of pre-cotyledonary conifer embryogenic cells in, or on, a synchronization medium that comprises an absorbent composition and at least one synchronization agent prior to cultivation in a development medium, as now claimed. Accordingly, it is submitted that the Pullman et al. reference fails to disclose or suggest all the elements of the claimed invention, and the invention of Claim 1 as amended, is not anticipated by or obvious to person of ordinary skill in the art in view of this reference. Applicants therefore request removal of this ground of rejection.

The Rejection of Claim 19 Under 35 U.S.C. § 103(a) as Being Unpatentable Over U.S. Patent No. 5,294,549 (Pullman et al.)

Claim 19 stands rejected under 35 U.S.C. § 103(a) as Being Unpatentable Over U.S. Patent No. 5,294,549 (Pullman et al.). Claim 19 depends from Claim 1, which has been amended as described above.

It is submitted that the Examiner has failed to establish a *prima facie* case of obviousness because Pullman et al. fails to disclose or suggest all the claim elements of the claimed invention. For at least the reasons described above, amended Claim 1 is neither anticipated by nor rendered obvious over the Pullman et al. reference. Moreover, as acknowledged by the Examiner, Pullman et al. fails to teach the production of Loblolly pine embryos as required by Claim 19. Therefore, the cited reference fails to teach or suggest all the elements of the invention as claimed. Removal of this ground of rejection is respectfully requested.

The Obviousness-Type Double Patenting Rejection

The Examiner has provisionally rejected Claims 1, 8, and 9 over Claims 17, 18, 19, 20, and 21 of co-pending Application No. 10/405,819. Applicants will submit a terminal disclaimer over co-pending Application No. 10/405,819 upon a finding of an allowable claim.

CONCLUSION

In view of the foregoing remarks, applicants respectfully submit that all the pending claims are in condition for allowance. If any issues remain that may be expeditiously addressed in a telephone interview, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,

CHRISTENSEN O'CONNOR
JOHNSON KINDNESS^{PLLC}



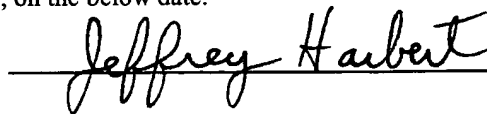
Tineka J. Quinton
Registration No. 53,496
Direct Dial No. 206.695.1655

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LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100



Sample Form (03-04)

AUTHORIZATION TO ACT IN A REPRESENTATIVE CAPACITY

In re Application of:
Pramod K. Gupta et al.

Application No.
10/636081

Filed:
08/06/2003

Title:
METHOD FOR PRODUCING CONIFER SOMATIC EMBRYOS

Attorney Docket No.
WEYE127079/24866A

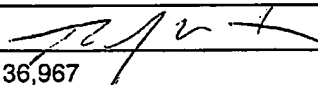
Art Unit:
1661

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